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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/772,345	02/06/2004	Isao Ochiai	2905-107	5051

52190 7590 05/10/2006

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EXAMINER

DAVIS, ROBERT B

ART UNIT PAPER NUMBER

1722

DATE MAILED: 05/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/772,345

Applicant(s)

OCHIAI ET AL.

Examiner

Robert B. Davis

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1722

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 10/291,815.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/6/04</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Drawings

1. Figures 16-18 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See JP 08-181160. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 5 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamada et al (5,200,366: figures 1 and 6-12; and column 6, lines 38-44 and 53-61).

Yamada et al teach a resin sealing mold assembly (30) having an upper mold (31) and a lower mold (32), comprising a substantially hexahedral molding cavity (40) for housing a semiconductor element (pellet 24) and a substrate (11); and at least one air releasing groove (42) at the contact surface of the lower mold from at least one corner of the hexahedral cavity. Figure 7 illustrates that the cavity (40) has four air

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vents (42) at each corner of the cavity. The specification (column 6, lines 38-44) states that the "cavity 40 is shaped in square and planar shape" and "To facilitate mold release, a taper is applied to each side wall of the cavity 40 so that an open of the cavity 40 becomes progressively greater from the bottom to the upper portion." As shown in figures 6 and 7, the cavity 40 has a square flat bottom, four sides wherein the corners are angled outwardly and the other end of the cavity (the opening) is a larger flat square. The language in claims 1, 5 and 7 pertaining to a leadframe are intended use as the mold of Yamada et al is capable of packaging a chip mounted on a leadframe.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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6. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese reference (06-310642 A: figures 1-7, abstract and paragraphs 29-38 and 59-60 of the mechanical translation) taken together with Yamada et al.

The Japanese reference discloses a resin mold assembly comprising a top mold (37) and a lower mold (38) forming a cavity, which clamps a leadframe (30). The leadframe (30) has outer support bars (35-1b to 35-4b), which have holes (45, 46) in the leadframe corresponding to the vent (40: see figures 3-5). Figures 3-6 illustrate that the cavity (39) has tapered sides, but does not disclose that the cavity is in the shape of a hexahedron. The holes (45, 46) serve as a vent in the leadframe when positioned in the mold vent (40).

Yamada et al disclose a mold for forming a packaged semiconductor element as disclosed previously, wherein the mold cavity (40) is shaped as a hexahedron with tapered sides to improve release of the article from the molding cavity.

It would have been obvious at the time of the invention to one of ordinary skill in the art to modify the apparatus of the Japanese reference to have a tapered hexahedral mold cavity as disclosed by Yamada et al for the purpose of improving release of the molded article from the mold cavity.

Claim 2 is interpreted as a combination mold and leadframe claim, whereas claim 1 merely recites the leadframe as intended use of the apparatus.

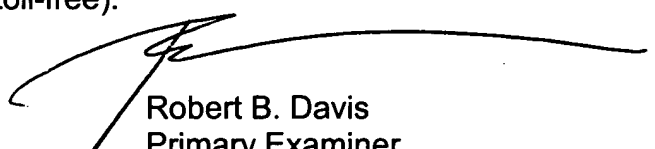
Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The webpage mathworld.wolfram.com describes the possible shapes of a hexahedron.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert B. Davis whose telephone number is 571-272-1129. The examiner can normally be reached on Monday-Friday 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yogendra Gupta can be reached on 571-272-1316. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Robert B. Davis
Primary Examiner
Art Unit 1722

5/8/06